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Social Absorption Capability, National System of Innovation and Manufactured Export response to Preferential Trade Incentives

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Abstract

In many extant analyses of the impact of non-reciprocal system of trade preferences it is typical to focus on the details of market access value of tariff concessions as explanation for why export of beneficiaries may or may not respond to incentives. Very often the role that supply-related factors can and do play in the process is relegated to the background. This paper argues that the social absorption capability of a beneficiary's economy as expressed in her incumbent National System of Innovation is a crucial determinant of export performance response. The experience of sub-Saharan African countries under the US African Growth and Opportunity Act apparel trade incentive is used as a classical illustration of this proposition. It is shown that the comparative efficiency of Lesotho, despite emerging from a relatively weak performance potential background, in recording the highest level of export success among beneficiaries of the scheme is a function of the relative efficiency of her system of innovation in garment.

Keyword: Institution, Innovation, NSI, Trade Preference, Garment

Section 1: Introduction

Analytical models of non-reciprocal system of trade preferences (henceforth, NRSTP) have implicit recognition for the potential role of supply-related capability in facilitating export performance responses from beneficiaries. Yet in the continuing analysis of the effectiveness of programmes emphasis is overwhelmingly on the details of demand related factors with respect to whether or not effective rate of protection is sufficiently reduced by tariff concessions to stimulate export of targeted products. In intellectual exercises of this genre it is common for researchers to focus on the impact of NRSTP typically by regressing a binary preference variable on bilateral trade flows. Whatever the outcome of estimation turns out to be, postmortem diagnoses often place responsibility at the door-step of the real the value of concessions afforded by programmes. In one extant survey of literature Brown finds that though some evidence exist that NRSTPs stimulate export of preferred products their impacts have largely been unsubstantial due to the imposition of such restrictive conditions as product exclusions, quantitative restrictions, rules of origins etc all of which appeared to have limited the value of incentives they offer (Brown, D. K. 1988). In a more recent exercise, Hoekman and Ozden also report that many empirical assessment of the impact of NRSTPs reveal that these schemes have had limited impact on export expansion in targeted areas largely because of their value-diminishing restrictive conditions such as imposition of quota ceiling, competitive needs limit, product coverage, rules of origin etc (Hoekman and Ozden, 2005).

Efforts to bring some of the supply related factors into focus have so far been limited. Insights from available studies reveal that the pervasiveness of structural weaknesses in virtually all sectors of beneficiaries' economies makes utilisation of benefits of market access preferences difficult for domestic producers (UNCTAD, 2003). These weaknesses are usually thought of in terms of critical deficiencies in the supply of business support physical and institutional infrastructures. While this would undoubtedly explain part of the problems associated with export responses it is our opinion that it is not a sufficient explanation. The issue of capacity to supply must move beyond these basics to accommodating the fact that it is the social absorption capability of an economy which as argued later in this paper finds expression in the incumbent National System of Innovation (NSI) that matters. Therefore, the main task of the paper is to show that all other things being equal a country with more efficient system of national innovation will do a better job of capturing benefits externalised by developmental aid programmes like NRSTP. In other words, export performance response to preferential trade stimulus is here hypothesised to be stronger for countries with relatively efficient NSIs.

In the section that follows insights from three strands of analytical literature that includes institutional economics, NSI and trade preference are used to motivate this argument with the overall objective of developing a conceptual framework for the analyses that are undertaken. Subsequently in Section 3, the experience of sub-Sahara African (SSA) countries in relation to garment export performance under the African Growth and Opportunity Act (AGOA) trade preferences are presented. To explain this performance especially with respect to the superior achievement of Lesotho Section 4 traces the evolution of her NSI in garment and Section 5 places it in context of the NSIs of some of the comparator countries. The paper's concluding comments are contained in Section 6.

Section 2: Analytical Framework

The last decade of the twentieth century witnessed a major twist in development debate as the hitherto dominant neoliberal paradigm came under scathing attacks. Apparently dissatisfied with the failure of neoclassical policy prescriptions to overcome fundamental problems of development thematic diagnosis took a different turn with the resurgence of institutional perspective. Of great influence in this new dawn are two strands of institutional thought one being associated with the theory of 'path dependence' and the other with 'imperfection'. The path dependence approach led in the main by Nobel Laureate Douglas North has a very sympathetic disposition to the market friendly view of the neoliberals preferring only to limit the role of institution in development to the extent that it is sufficient to support the working of an Arrow-Debreu type competitive market economy. In the minimum however, as long as institutionally defined rule of engagement does not inhibit the process of market operations everything would, understandably, be fine. Those who latched on to the theory of imperfection to launch their attacks are however more combative in their style. They claim that the conditions under which the Arrow-Debreu competitive general equilibrium model was obtained is suspicious. In particular the assumptions of perfect information and perfect markets are considered to be too simplifying and that imperfection is the pervasive reality especially in the context of development analysis.

As a major proponent of this thought another Nobel Prize Winner Joseph Stiglitz along with his collaborators moved further to show that these imperfections generate externality-like effects which through positive feedback can give rise to multiple equilibria. Whether a society settles down at a low-level inefficient equilibrium point or a high-level efficient one depends in part on its history and in part on its social absorption capability. For instance, accident of history that facilitates incidence of skilled immigrants is seen as one type of historical event that can move such economy from one equilibrium point to another. Social absorption capability however, relates to systemic capability of a socioeconomic nature to internalise the externalities and drive the economy from low-level to high-level equilibrium point. It is viewed in terms of market intervention of an institutional kind. According to Stiglitz, it is a form of coordinated effort on the part of both government and private sector to enhance the ability of a society to innovate, deploy resources efficiently, adopt newer improved technologies or produce products that were not produced within the country previously (Stiglitz, 1995). The efficacy of such coordinated intervention determines the social absorption capability of an economy.

It can be argued that the emphasis on partnership between the state and the private sector in driving development agenda especially of an innovative kind resonates well with the concept of NSI that appears to have gained increased analytical attention since the works of Freeman (Freeman 1987), Bengt Åke Lundvall (Lundvall 1992) and Richard Nelson (Nelson 1993). Although its adoption as a framework for understanding and promoting development was initially confined to the OECD and developed countries, since the efforts of the Aalborg University and the DRUID Programme however, the NSI framework has been increasingly applied to study the problem of underdevelopment in developing countries. More recently, Muchie and his colleagues sought to apply the concept specifically to African realities (Muchie, et. al., 2002). As an analytical construct the NSI focuses on the network and interaction of institutions in both public and private sectors that are concerned with generation and application of new knowledge (innovative activities). These institutions often include but not limited to

firms, universities, government, investment banks and other national regulatory bodies. Depending on peculiarities and circumstances other agencies may be included in so far as their activities directly or indirectly affect innovation (Lundvall, 1992).

Particularly important for absorptive capability is the recognition in NSI studies that state institution plays a central role in the emergence and diffusion of new knowledge. The emphasis on public private partnership in many extant definitions of the concept seems to have underscored this fact (Hung, 2000). As an actor of pre-eminence status the state provides direction, frames the policy agenda and creates incentives and conditions necessary for new knowledge to take-off (Baskaran and Muchie, 2009). It would be quite difficult to fault the logic that presence of an enabling environment is a necessary precondition for absorbing new technology. In a recent analysis of the evolution of Norway's Innovation System Fagerberg et al., (2008) described how state's intervention has been so pivotal in the transformation of the track of industrial development from its light knowledge base to knowledge intensive path. In their analysis, the authors pointed out that through heavy investment in public R&D laboratories and universities as well as provision of economic support to selected hi-tech firms government was able to create the right kind of environment needed for knowledge-intensive activities to grow.

However, the creation of enabling condition by the state and perhaps followed by subsequent take-off of new knowledge activities is just but one of the first key steps needed for innovative activities to flourish. In the evolutionary approach to the study of NSI, the literature also describes how the prospects of adaptation and retention matter for success or failure of the process. Here important recognition is given to the extent to which profiles of the selection environment match those of the new technology that is being promoted. Different forms of innovative activities would be suited for different kinds of environment and it does matter that for a given environment, attributes of the new knowledge fit well into its economic characteristics before adaptation and retention become realistic. Whereas availability (or an ability to support its creation) of strong R&D infrastructures like universities and research centres may be required for developing absorptive capability and allowing hi-tech skill intensive activities to flourish, this may not be necessary if the innovative activities to be promoted are of low-tech labour intensive nature. In which case, it may just suffice to have an economy with abundant labour supply endowment drive the innovative activity.

This is not to imply that even for a labour-intensive technology the skill factor is not important at all for evolution. Indeed growth and development of the new knowledge activity requires successful exploitation of the match between environmental and technological attributes which is possible only through the complimentary input of the skill factor. What then does this imply for innovation in the context of skill deficient sub-Saharan African economies? It simply means that required skill for driving innovative activities will either have to be developed locally or imported from abroad. In [Pietrobelli \(2000\)](#) it is argued that the dearth of skilled manpower in developing countries has often meant that activities of diverse international technology transfer mechanisms or agents such as FDIs or MNEs are crucial for growth and development of new technology. Thus, ability to attract FDI into particular sector may reasonably be associated with ability to promote development of innovative activities in such sector.

One final dimension of the evolutionary perspective which is relevant for relating the NSI concept to absorption capabilities of economies is the path-dependent argument. It is hypothesised that history matters and technological learning is a long and cumulative process (Iammarino, et al., 2008). In other words technological capability is a cumulative outcome of knowledge creation, adaptation and development that has just been described. Current ability can be understood in the context of these historical antecedents. Economic achievements of today have roots in the quality of initial conditions that past actions have generated. A NSI that is effective in absorbing development opportunities of certain kind presented to it must have over time developed and mastered the required learning capability through a cumulative process of successful creation, adaptation and development. For instance, if a nation performs better than other comparable counterparts in the export of a certain kind of goods it must be that such nation's NSI has overtime developed a relatively better set of initial conditions that may be appropriately reflected in Lall's three dimensional criteria of investment, production and linkage capabilities (Lall, 1992).

In response to a development stimulus like preferential trade incentives for instance, a relatively efficient set of initial conditions would not only assure relative efficiency in resource allocation (investment capability) but also in operational utilisation (production capability) as well as coordinating activities of relevant technological agents (linkage capability).

In a nutshell the import of the above analysis is simply that social absorption capability which determines how well a country succeeds in creating and taking advantage of development opportunities is a function of its NSI. The efficiency of NSI in building absorption capability is itself determined by the cumulative process of knowledge creation, adaptation and development which generates a set of initial conditions in the areas of production, investment and linkage capabilities. The quality of these capabilities will ultimately determine the quality of absorption capability and it goes without saying that capabilities that are of strong form will be more effective in taking advantage of development incentives than those that are of weak form. The relationship we have just described is illustrated in Figure 1 below.

Figure 1: [about here](#)

As can be seen the role of the state in creating incentives and or enabling conditions for new technology to take-off is a crucial first step in the evolutionary process of new technology. Adaptation which is an important pre-requisite for development is however contingent on ability of the host economy to meet its (new technology) performance requirements. Further development in the context of skill deficient backward states would require an ability to attract FDI of a relevant kind. This process eventually converges at a level to create a set of initial conditions in the key elements of the NSI (production, investment and linkage) which may be strong or weak. NSIs with more successful history of evolution will have stronger set of initial condition which confers better supply capacity. All other things being equal such NSIs will respond better to development incentives.

Section 3: Country Level Trade Performance under the African Growth & Opportunity Act Apparel Incentives

The African Growth and Opportunity Act, was signed into law on May 18, 2000 under the US Trade and Development Act of 2000. It aims to assist sub-Saharan African (SSA) development efforts by providing incentives to enable countries improve their economic performance through trade¹. Section 102 (1) of the Act enunciates its major policy thrust to include the promotion of stable and sustainable economic growth and development in SSA through (amongst others) preferential treatment of apparel exports of beneficiaries to the US market.

Prior to AGOA apparel exports from SSA were regulated by the Multi-Fibre Agreement (MFA) quotas and were not among the list of products covered under the US GSP scheme. Since the Act is basically an improvement on this scheme (i.e. US GSP), some analysts have reckoned that its real benefits lie in the extension of product coverage to apparel and petroleum (Mattoo, et al., 2002) and that its most developmentally significant concessions are in apparel (Gibbon, 2003).

The first version of AGOA that was signed into law in 2000 (AGO A I), extended duty free and quota free access to US market for apparel made in eligible sub-Saharan African countries from US fabric, yarn and thread from 2000 to 2008. For apparel made with fabrics from qualifying countries (regional fabrics), a cap of 1.5%, which was expected to increase to 3.5% of total, US apparel imports over an eight year period was imposed.

Under the ‘third country’ fabric provision, a special concession was granted to Least Developing Countries whereby apparels made from fabrics originating from anywhere in the world were allowed until 2004. However, eligibility for these trade concessions was conditioned on beneficiaries meeting a number of political and economic prerequisites in addition to an administrative requirement of having an effective visa system that is approved by the US Customs Department in place.

Subsequent amendments to the Act as contained in the AGOA II of 2002, AGOA Acceleration Act of 2004 (AGO A III) and Africa Investment Incentive Act 2006 (AGO A IV) had all sought in one way or another to improve on the scheme’s deliveries. As it is at the time of writing this report, the third-country fabric provision now lasts until September 2012 while the life span of the Textile and Apparel provisions has been extended till 2015.

Since the trade incentive scheme became operational apparel exports of beneficiaries have understandably exhibited different levels of export performance responses. Table 1 below presents export data for the 12 countries that qualified to export their apparel items under the provisions of the Act as at December, 2001.

Table 1: [about here](#)

¹ See: www.agoa.gov

Easily noticeable is the domineering performance of Lesotho in the table. With the highest value of export achievements for each and every year the small landlocked economy outperformed all others that exported apparel to the US market during the reference period. To make sense of this performance it would be useful to put it in context of her relative trade potentials. According to the hypothesis of the Gravity Model, level of trade performance is a function of economic size and distance or cost of transportation between two countries. Thus other things being equal, we should expect larger economies with relatively lower potential cost of transportation to exhibit better trade performance than their counterparts.

Table 2 below reports GDP figures for each of the countries under consideration for the reference period of 2002-2004. It is observed from this table that Lesotho recorded the lowest GDP figures for each of the 3 year period. In terms of economic size this implies that her economy is the smallest in the group. Furthermore, since virtually all countries fall within the same Southern and Eastern Africa regional zone and US is their market destination the only factor that would appear to be important in explaining transport cost differentials is landlocked status. It also turns out that Lesotho falls among the class of disadvantaged countries as she is completely surrounded by South Africa. This evidence points to the fact that her superior and unrivaled export performance achievement is somehow paradoxical as it defies all logics of the theoretical model of international trade flow.

A diagnostic venture would reveal that the two cases of South Africa and Mauritius could be special because it is probably the lower market access value of incentives extended to them that explains their lower performances. Both countries were not excluded from the cumulation provision of the Act. To qualify for the scheme's benefits a triple transformation requirement whereby producers in the two countries must either use qualifying local and regional fabrics and yarns or US fabrics and yarns was in force. This may explain why the lowest utilisation rates as revealed in Table 1 are recorded for the two economies.

However, since the remainder of our beneficiaries are faced not only with the same level of tariff and non-tariff concessions but also qualifying conditions explanations for why Lesotho delivers superior export performance would no longer be on the details of market access value of incentives. Focus has to shift elsewhere and this is where our argument that the social absorption capability as expressed in a beneficiaries' incumbent NSI can provide us the clue to unlocking the puzzle becomes relevant.

Table 2: [about here](#)

Section 4: Lesotho's National System of Innovation in Garment

4.1 The significance of Garment sector in Lesotho Economy: Established as a British protectorate in 1868, Lesotho became an independent constitutional monarchy in 1966. Unlike many of her SSA neighbours the small landlocked economy has no known natural resource other than water. But like many of her neighbours she is largely dependent on subsistence agriculture and until the 1990s remittances from her Basotho emigrant mineworkers in South Africa.

This dependence has however been crippled by the emergence and phenomenal expansion of the garment sector. From a near non-existent activity in the early 1980s the sector has grown to become a significant part of the national economy with contribution to GDP steadily increasing from next to nothing in the early 1980s to about 13 percent in 1996 (International Trade Centre (ITC), 2001) and roughly 19 percent in 2004 (Bennet, 2006). Given that manufacturing activities in SSA excluding South Africa rarely account for up to 10 percent of GDP this is a significant achievement by the sector.

Most inward FDI in the country also goes to the sector. According to one estimate nearly 90 percent or more of total FDI receipts is driven by export oriented garment manufacturing business (Salm et al., 2002). Again, when judged against the background of SSA standard where a very large percentage of FDI in the region goes into resource extraction it would be easy to appreciate the remarkable nature of the feat.

Emergence of the sector has had significant impact on employment as well. From creating about 9,847 jobs in 1999 the employment relevance of the industry increased to more than 53, 000 jobs in 2004 effectively making it the country's second biggest formal sector employer. During the 2004 period it is even revealed that textile and garment manufacturers employed more people than the Government of Lesotho.

Another indicator of how significant the sector is to the national economy is that country level export profile is predominantly concentrated in garment output. A 2002 estimate approximates the share of garment and textile export in total export to 74 percent (Bennet, 2006). The historical performance is even more revealing. Available record shows that Lesotho's export of the article is significant not only at national level but also at sub-regional level. In 1996 for instance, her value of garment exports which stood at \$154 million made the country the largest singular exporter of garment in SSA that year. Also in 1993 when total value of apparel exports by SACU countries excluding Lesotho amounted to \$50 million, the country again emerged as the biggest exporter from the Union with about \$106 million value of exports². Figures for both Zimbabwe and Kenya that are non SACU countries year during the year under consideration were \$42 million and \$9 million respectively (Riley and Benvenisti, 1998). In 2004, the total value of clothing export from Lesotho to the rest of the world which stood at \$457 million was unmatched by any country in SSA (WTO, 2009).

² SACU stands for Southern Africa Customs Union and comprises South Africa, Namibia, Botswana, Swaziland and Lesotho

4.2 Evolution of NSI in Garment: Innovation is often interpreted to mean widespread adoption and sufficient mastery of new technology in ways that internal learning capabilities needed to utilise and improve on this technology are successfully developed. This at least, is what is required to drive international competitiveness in the area. But despite her record of achievement as evidenced above Lesotho does not presently command the kind of widespread and deep knowledge capability in clothing business sufficient to make her globally competitive. Indeed, much of the technical and organisational skill applied in the manufacturing and marketing of garment in the country is still confined to the Asians who brought in their foreign capital to exploit temporary market access advantages. Very little knowledge diffusion and local learning is currently taking place in the economy. So how do we safely characterise such system as a strong performing National Innovation System?

We argue in this paper that innovation does not have to be radical or absolute before it can generate developmental outcome of the type just described. Especially in the context of developing countries incremental innovations are more important and attainable than radical ones (Edquist, 2001). Against this caveat we now begin the process of tracing the evolution of the country's NSI with the objective of showing how a combination of factors which have both institutional and NSI undertones have had significant impact on the creation of a relatively strong initial condition in the technology of garment production.

4.2.1: Creation: The take-off of formal garment manufacturing in Lesotho cannot be divorced from historical accident. It was actually precipitated upon the activities of South African producers who during the early 1980s opened up factory shops in the small landlocked economy to avoid international sanctions placed on their home/host country by the USA and Europe. This will undoubtedly explain why the concentration of initial production activities in the country was largely confined to the Maputsoe cluster area which is the closest cluster to the South African city-headquarter of garment manufacturing: Durban.

Overtime however, a combination of trade agreements with The West facilitated by government and generous incentive packages offered by government owned Lesotho National Development Corporation (LNDC) created the right incentives needed for investment in, and final take-off of, the new technology. For instance, as a result of her qualification under two important preferential trade treaties: the Generalised Systems of Preferences (GSP) and Lome Convention, Lesotho qualified to export her garments to such key markets as USA, Canada, European Union and other non-European Union countries at concessionary duties. This qualification together with investment related incentives like tax, payment for factory shells, provision of infrastructures etc offered by LNDC led to the influx of Asian direct investment into the sector. The first of such investment was launched in 1986 with the setting up of a plant known as Lesotho Haps. Over the next five years four additional plants that included China Garment Manufacturers (CGM) and C&Y Garments (owned by Nien Hsing) were set up by the Taiwanese. Other investors that came on board during the same period were the South African jeans maker - H D Lee and one Hong Kong garment producer (UNCTAD, 2003).

4.2.2: Adaptation: The success of this evolutionary phase was also partly facilitated by the kind of congruence that exists between profile of the new technology being promoted and Lesotho economic attributes. As we all know that garment production is essentially a labour intensive

activity, it neither requires the presence of top-grade university/research centres nor highly trained and well educated labour force to flourish. What is required is a kind of labour force that is only functionally literate at preferably low cost. Field interviews conducted in 2006 on officials of Lesotho garment firms reveal that availability of cheap labour cost was among the key factors that attracted them into the economy. This fact has also been recently confirmed by two other independent studies (World Bank, 2007; Salm et al., 2004). Table 3 below which presents comparative weekly manufacturing wage rates for countries in SACU shows that costs are lowest for Lesotho.

Table 3: about here

4.2.3: Development: As time went by the sector witnessed further development as FDI into garment continued to grow. As Table 4 reveals, this growth was so remarkable that by the end of 1999 which was the year preceding the declaration of AGOA preferential trade scheme about half of the country's stock of garment plants that accounted for significant sectoral employment in 2002 was already in place and in the hands of foreign affiliates (UNCTAD, 2005).

Table 4: about here

The end result of this process was that by end of the year 2000 the country had developed a level of technological capability in the area of apparel production and export which was useful enough for responding to development opportunities. Thus, by the time AGOA finally presented its own in 2000 Lesotho was able to tap on this level of initial condition to out-perform other economies in the race towards exporting garment to the US market.

Section 5: Comparative Analysis of the capability of Lesotho's National System of Innovation

Perhaps the superiority of her absorption capability would be better explained by analysing the strength of each element of her NSI capability in relation to those of others. In order to enhance the level of intellectual coherence however, this comparative analysis is carried out with respect to other LDC members of SACU. Not only do these members belong in the same custom union zone with Lesotho they (except Botswana) also have their currencies pegged to the South African Rand on a one to one basis.

5.1: Investment Capability: This is understood to mean professional ability to assess the feasibility and profitability of an investment project as well as to deploy the most efficient combination of resources for executing it. From a national perspective building this kind of competence in a buyer driven apparel value chain often depends on ability to establish close linkages with a wide array of network lead agents. As chain governors, they play key roles in the setting up of decentralized production networks especially in developing countries. They are often the primary sources of demand, material inputs, technology, knowledge and even capital

needed to make and implement good investment decisions (Gereffi, 1999). The transfers of these knowledge and resources to developing countries usually take the form of FDI. It does follow that the investment capability of a given system of innovation in garment in developing countries would be reflected in the level of FDI in the sector. If we approximate such capability with the proportion of total inward FDI stock accounted for by textile and garment sector of an economy Table 5 below provides data as it existed at the end of year 2000 for the countries of Lesotho, Swaziland, Botswana and Namibia.

Table 5: about here

As detailed disaggregated FDI data at textile and garment level is not available for all economies except Lesotho values for Swaziland and Botswana reflect total manufacturing industry share of FDI while that of Namibia is for the whole secondary sector. When judged against the background that textile and garment is just a component of all these Lesotho's record of having almost all of her own entire FDI (at over 90%) concentrated purely in textile and garment looks all the more impressive. Thus, in terms of investment capability, Lesotho's NSI can rightly be qualified as stronger.

5.2: Production capability: In the context of developing economies where the focus is on technology transfer rather than innovation per se production capability would refer to the efficiency with which a particular system of innovation can transform input into output given available technology. Such efficiency can be guaranteed by an availability of competent workforce with adequate skills for handling important tasks like quality control, equipment stretching, scheduling workflows, trouble shooting, inventory control etc. Naturally, labour productivity would be a suitable measure of this form of capability but in the absence of data we argue that efficiency in production can also be gauged by the extent to which a particular sector is competitive in the export market. From the comparative advantage theory of international trade we learn that trade is a function of relative production efficiency and that countries will specialise in the production and trade of those goods where their comparative efficiencies are highest. Assuming such comparative efficiency in the context of our current analysis can be captured by the share of textile and garment export in total export of the country we present in Table 6 what statistics reveal for our focal economies with respect to year 2000.

Table 6: about here

With garment export value at nearly 80% of total exports, Lesotho's competitiveness and hence NSI production capability in textile and garment is impressively very strong. Given that only the performance of Swaziland at nearly 24% can be described as something significant the impression one gets is that Lesotho's NSI production capability stands taller than the rest.

5.3: Linkage capability: For NSI to be efficient, interactions among various technological agents of the system are required on a regular basis. It could take the form of cooperation and/or collaboration between enterprises, service suppliers, universities, government institutions among

others. The quality of these interactions therefore determines the technological capability of a given system. However, in comparison with most industrialised countries the market environment in a typical developing economy is weakly developed to efficiently support good flow of communications and interactions needed to enhance linkage capability. Key networking infrastructures like communication and transportation facilities are either absent or in poor state. Coupled with this, level of awareness of the importance of linkage activities and consequently efforts typically devoted to achieving it by technological agents is usually circumscribed by knowledge deficits that pervade all areas of technological nodes. As a result responsibility for stimulating innovation system of interaction has often been largely assumed by innovation brokers that have evolved within systems. Central to Lesotho's success story in this regard is the role of producer associations.

There are three main producer associations whose roles over the years have been fundamental in facilitating linkages of garment firms with other constituents of the innovation system. These are the Lesotho Exporters Association, Taiwanese Chamber of Commerce and Lesotho Industrial Employers Association. As key brokers for advancing the interests of their members they have been relatively successful in articulating and promoting their linkage needs.

In analyzing their success story especially with regards to the linkage interests of garment producers the role of two important factors will easily come to the fore. One, these associations are all very old in the business. For instance Lesotho Exporters Association was established in 1980 while Lesotho Industrial Employers Association also came into being about the same time. Having been around for such long time they are much more likely to have acquired very useful experience in the art of networking within the national system. One fairly recent incident that testifies to this is that in 2001 the intervention of Lesotho Exporters Association in the wage dispute between garment workers' union and their employers helped avert an industrial action in the sector (Salm et al., 2002).

Two, though in principle the associations are industry-wide based interest groups, in reality they are almost synonymous with the garment sector. Nearly half of the country's manufacturing firms is in garment and leather sector (World Bank, 2007). Indeed, Lesotho Exporters Association grew out of the garment sector: it was originally established as a lobby group for textile and garment derogation provision. It is therefore no surprise to observe that membership of the associations comprise almost entirely of garment producers. As dominant majority it is almost certain that it is their voice that would be most audible and their interest the most served.

However, unlike what obtains in Lesotho situations in the other three countries present completely different pictures. In Botswana for instance, most garment and textile producers are not members of any representative union and as such cannot not lay claim to any collective voice that can help articulate their interests. For Swaziland and Namibia, textile and garment production is just picking up courtesy of AGOA incentives. Their NSIs with respect to textile and garment have not been able to evolve the kinds of strong linkage institutions that have helped nurture Lesotho's system of innovation in the sector.

Section 6: Conclusion

In the final analysis, it is our humble submission that efforts to explain effectiveness of NRSTP must give due recognition to the role that supply-side factors play in facilitating export responses. The argument we put forward is that ability to respond to and capture benefits externalised by development aid schemes is a function of respondent's social absorption capability. This capability is itself determined by the quality of incumbent NSI and it goes without saying that countries with robust system of national innovation will possess both strong absorption and response capability to incentives of developmental aid schemes like trade preferences.

The experience of SSA countries with apparel exports under the US AGOA preferential trade initiative is presented as a classical example of this proposition. It is shown that the superior export performance record of Lesotho despite emerging from a relatively weak position is a function of the relative efficiency of her NSI in garment. It follows from this finding that unless policymakers wake up to the reality that the translation of preferential trade incentives into meaningful export supply response is as much a function of response-enhancing NSI as it is a function of value of preferences impact of their implementation may continue to be of limited value.

References

- Bennet, M., 2006. Lesotho's export: textile and garment industry. In: Jauch, H., Traub-Merz, R. (Eds.), *Future of the Textile and Clothing Industry in Sub-Saharan Africa*. Friedrich-Ebert-Stiftung, Bon.
- Baskaran, A., Muchie, M. 2009. Exploring the impact of national system of innovation on the outcomes of foreign direct investment. *Int. J. Technological Learning, Innovation and Development* 2(4), 314–345.
- Brown, D. K., 1988. Trade preferences for developing countries: a survey of results. *Journal of Development Studies* April, 335-363.
- Edquist, C., 2001. Systems of innovation for development. Background paper for Chapter 1: Competitiveness, Innovation and Learning: Analytical Framework for the UNIDO World Industrial Development Report (WIDR), 2001.

Fagerberg, J., Mowery, D. C., Verspagen, B. 2008. Innovation-systems, path-dependency and policy: the co-evolution of science, technology and innovation policy and industrial structure in a small, resource-based economy. TIK Working Papers on Innovation Studies No. 20080624. <http://ideas.repec.org/p/tik/inowpp/20080624.html> (accessed on 12. 11. 09).

Feinson, S. (Ed.) 2009. National innovation systems: overview and country cases. Unpublished paper. <<http://www.cspo.org/products/rocky/Rock-Vol1-1.PDF> (accessed on 12. 11. 09).

Freeman, C. 1987. Technology Policy and Economic Performance Lessons from Japan: London.

Gereffi, G. 1999. A commodity chains framework for analysing global industries. In: Institute of Development Studies, 1999, "Background Notes for Workshop on Spreading the Gains from Globalisation. <http://www.ids.ac.uk/ids/global/conf/wkscf.html> (accessed on 10. 07. 09).

Gibbon, P. 2003. The African growth and opportunity act and the global commodity chain for clothing. World Development 31, 1809-27

Hoekman, B., Ozden, C. 2005. Trade preferences and differential treatment of developing countries: a selective survey. World Bank Policy Research Working Paper 3566, April 2005

Hung, S. 2000. Institutions and systems of innovation: an empirical analysis of Taiwan's personal computer competitiveness. Technology in Society 22, 175–187

Iammarino, S., Padilla-Perez, R., Tunzelmann, N. V. 2008. Technological capabilities and global–local interactions: the electronics industry in two Mexican regions. World Development 36 (10), 1980–2003

ITC (International Trade Centre), 2001. Subregional trade expansion in Southern Africa: Lesotho supply survey on textile and clothing. Paper prepared for the International Trade Centre UNCTAD/WTO (ITC).

Lall, S. 1992. Technological capabilities and industrialization. World Development 20: 165–186

Lall, S. 2005. FDI, AGOA and manufactured exports by a landlocked, least developed African economy: Lesotho. The Journal of Development Studies 41(6), 998 – 1022

Lundvall, B. Å. (Ed.), 1992. National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning. Pinter, London.

Madonsela, W. S. 2006. The textile and clothing industry of Swaziland. In: Jauch, H., Traub-Merz, R. (Eds.) The Future of the Textile and Clothing Industry in Sub-Saharan Africa, Friedrich-Ebert-Stiftung, Bonn.

Mattoo, A., Roy, D., Subramanian A. 2002. The African Growth and Opportunity Act and its rules of origin: generosity undermined? IMF Working Paper WP/02/158.

Muchie, M., Gammeltoft, P., Lundvall, B. (Eds.), 2002. Putting Africa First: The Making of African Innovation Systems. Aalborg University Press, Aalborg.

Nelson, R. R. 1993. National Innovation Systems: A Comparative Study. Oxford University Press, Oxford.

Pietrobelli, C. 2000. Technology transfer for developing countries. In: Schroeer, D., Elena M. (Eds.), Technology Transfer. Ashgate, Aldershot.

Riley, T., Benvenisti, R. 1998. Lesotho's garment exports: attracting foreign direct investment. Findings reports on ongoing operational, economic and sector work carried out by the World Bank and its member governments in the Africa Region Findings No 103 January 1998

Salm, A., Grant, W. J., Green, T. J., Haycock, J. R., Raimondo, J. 2002. Lesotho garment industry subsector study for the government of Lesotho.
<http://www.commark.org/Downloads/ResearchAndLearning/Lesotho%20garment%20industry%20subsector%20report.pdf>; (accessed on 02. 03. 07)

Salm, A., Grant, W., Haycock, J., Kennedy, K., Rubin, M. 2004. Botswana textile and apparel sub sector study. Discussion draft. <
[http://www.bidpa.bw/docs/archive/Economic%20Diversification/Botswana ApparelSub Sector Study.pdf](http://www.bidpa.bw/docs/archive/Economic%20Diversification/Botswana_ApparelSub_Sector_Study.pdf)> (accessed on 22. 10. 09).

Stiglitz, J. E. 1995. Social absorption capacity and innovation. In: Koo, B. H., Perkins, D. H. (Eds.), Social Capability and Long Term Economic Growth. MacMillan Press, London.

Tralac, 2006. http://www.agoa.info/index.php?view=trade_stats&story=apparel_trade (accessed on 01. 12. 06).

UNCTAD. 2003. Main recent initiatives in favour of least developed countries in the area of preferential market access: preliminary impact assessment. Geneva. TD/B/50/5. http://www.unctad.org/en/dos/tb50d5_en.pdf; (accessed on 10. 07. 07)

UNCTAD. 2005. TNCs and the removal of textiles and clothing quota. UNCTAD/ITE/11A/2005/1. United Nations. New York and Geneva

UNCTAD 2008. World Investment Directory Volume X Africa. United Nations New York and Geneva
<http://www.unctad.org/Templates/webflyer.asp?docid=9732&intItemID=3204&lang=1&mode=downloads> (accessed on 17.10.09)

World Bank. 2007. Lesotho: an assessment of the investment climate. Report No 38295. http://siteresources.worldbank.org/INTAFRsumaFtps/Resources/Lesotho_Final_Gray_Cover.pdf. (accessed on 12. 05. 07)

World Bank African Development Indicator, 2009.

<http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20398986~menuPK:64133163~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html>

(accessed on 28.11.09)

WTO (World Trade Organisation) 2009.

<http://stat.wto.org/StatisticalProgram/WSDBStatProgramHome.aspx?Language=E> (accessed on 28.11.09)

WTO (World Trade Organisation) 2009. PRESS RELEASE: PRESS/TPRB/213:Trade Policy Review Southern African Customs Union Annex 1 — Botswana.

http://www.wto.org/english/tratop_e/tpr_e/tp213_e.htm (accessed on 17.10.09).

Figure 1: A Framework for analysing the relationship between social absorption capability, National System of Innovation and supply capacity

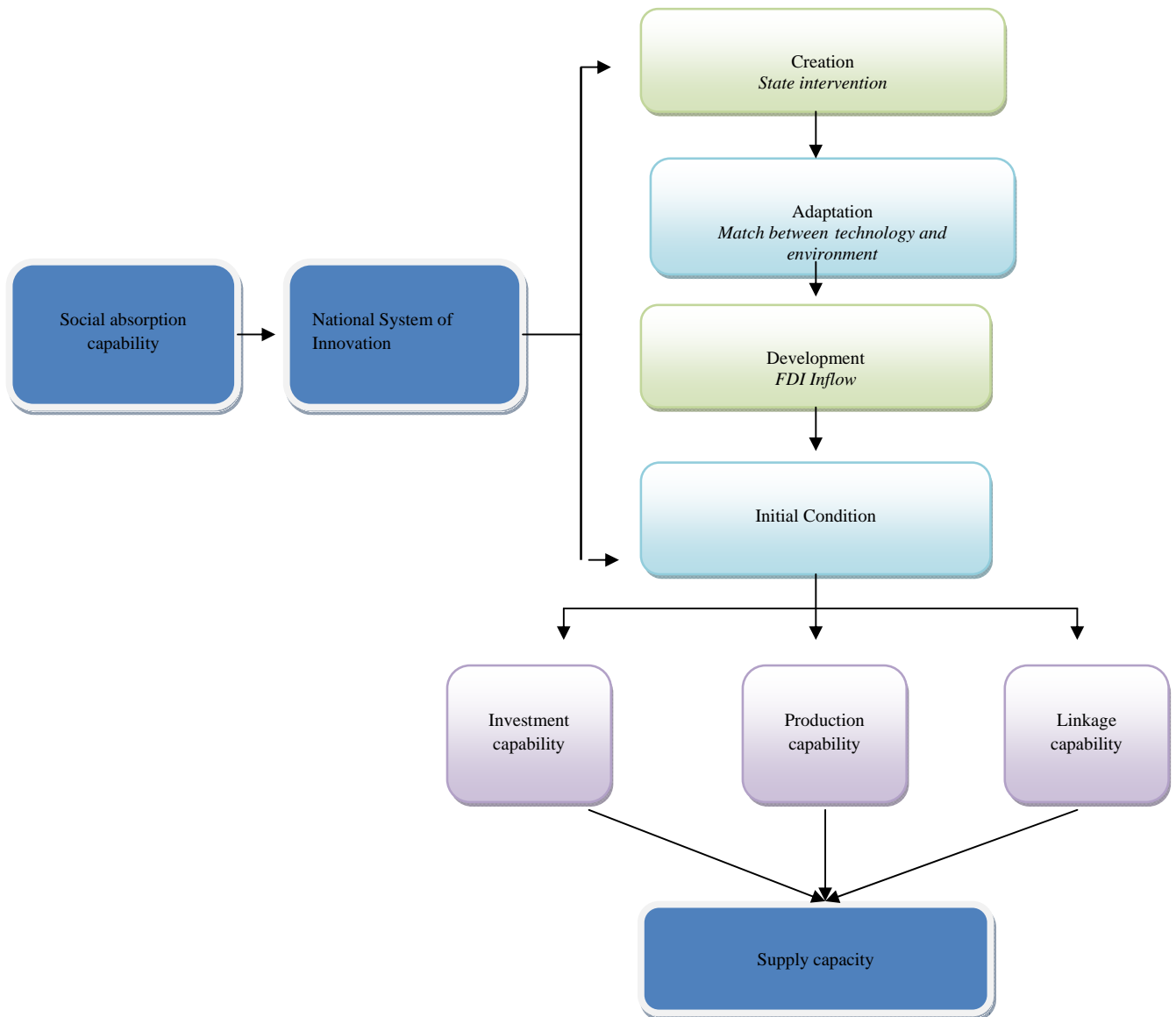


Table 1: Apparel export of beneficiaries to US market under AGOA Scheme (\$000,000)

<i>Country</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>Total</i>	<i>Utilisation Rate*</i>
Botswana	3.707	6.343	20.119	30.169	89%
Ethiopia	1.297	1.685	3.329	6.311	99%
Kenya	121.305	176.207	271.483	568.995	97%
Lesotho	317.660	372.614	446.487	1136.761	97%
Madagascar	75.421	186.254	314.178	575.853	95%
Malawi	11.405	22.389	25.482	59.276	97%
Mauritius	106.499	136.958	147.798	389.205	52%
Namibia	1.537	32.127	75.904	109.568	86%
South Africa	84.969	126.558	114.827	326.354	57%
Swaziland	73.718	126.841	175.639	376.198	92%
Uganda	0.000	1.416	4.009	5.425	96%
Zambia	0.000	0.000	0.022	0.022	79%

*Utilisation rate is the proportion of total apparel exports to US market accounted for by export under AGOA
Source: Tralac

Table 2: GDP Figure (\$000,000, 000)

<i>Country</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
Botswana	6.86	7.28	7.73
Ethiopia	8.99	8.80	9.99
Kenya	13.24	13.63	14.32
Lesotho	0.89	0.92	0.95
Madagascar	3.59	3.94	4.15
Malawi	1.58	1.68	1.78
Mauritius	4.84	5.00	5.24
Namibia	3.73	3.86	4.11
South Africa	141.52	166.65	152.99
Swaziland	1.32	1.37	1.40
Uganda	6.62	6.93	7.31
Zambia	3.49	3.69	3.89

Source: World Bank Africa Development Indicator

Table 3: Comparative Weekly Manufacturing Wage Rates in SACU

<i>Country</i>	<i>Rate</i>
Botswana	\$27
South Africa Metro	\$80
South Africa Rural	\$40
Lesotho	\$26
Namibia	\$30

Source: Salm et al., 2004

Table 4: Foreign affiliates in garments and footwear that accounted for significant sectoral employment, 2002

<i>Company</i>	<i>Home Economy</i>	<i>Industry</i>	<i>Employment</i>	<i>Entry Year</i>
Lesotho Precious	Taiwan Province of China	Garment	3620	1999
Presitex	Taiwan Province of China	Garment	2800	2000
CGM	Taiwan Province of China	Garment	2000	1987
C&Y	Taiwan Province of China	Garment	1900	1990
P&T Garments	Taiwan Province of China	Garment	1840	2001
Nien Hsing Tex Co.	Taiwan Province of China	Garment	1800	2001
United Clothing	Taiwan Province of China	Garment	1700	1996
Evergreen Textiles	Taiwan Province of China	Garment	1673	1995
Springfield Footwear	South Africa	Shoe	1641	1995
Lesotho Fancy	Taiwan Province of China	Garment	1540	2001
Tzicc	Taiwan Province of China	Garment	1210	2000
Teboho Textiles	Taiwan Province of China	Garment	1090	1997
Lekim	Singapore	Garment	1071	1997
Tai Yuan	Taiwan Province of China	Garment	960	2000
Sun Textiles	Taiwan Province of China	Garment	952	1994
King Ang	Taiwan Province of China	Garment	920	2001
Lesotho Hinebo	Taiwan Province of China	Garment	900	1989
N-River	Taiwan Province of China	Garment	850	2001
Hippo Knitting	Taiwan Province of China	Garment	850	2000
C-River	Taiwan Province of China	Garment	768	2001
Vogue Landmark	Taiwan Province of China	Garment	700	1996
Supreme Bright	Hong Kong (China)	Garment	635	2001
Superknit	Taiwan Province of China	Garment	600	1989
J&S	Taiwan Province of China	Garment	575	1996

Hong Kong Int.	Taiwan Province of China	Garment	550	2001
TW Garments	South Africa	Garment	500	2000
Carca Footwear	South Africa	Shoe	500	1997
Mountain Eagle	Fiji	Garment	490	2002
E-River	Taiwan Pronvince of China	Garment	429	2001
Maluti Textiles	Taiwan Pronvince of China	Garment	392	1998

Source: UNCTAD 2003.

Table 5: Percentage of total inward FDI stock accounted for by textile and garment sector at end 2000

<i>Country</i>	<i>Percentage</i>
Botswana*	Less than 3.5%
Lesotho**	More than 90%
Namibia***	Less than 7%
Swaziland****	Less than 70%

Source: *WTO, 2009; **Salm et al., 2002; ***UNCTAD, 2008; ****Madonsela, 2006

Table 6: Share of Textile and Garment Export in total Export in the year 2000

Country	Percentage
Lesotho	79.50%
Swaziland	23.60%
Botswana	0.02%
Namibia	0.00%